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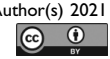
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Systemic Racism in Police Killings: New Evidence From the Mapping Police Violence Database, 2013–2021

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Abstract

This research note provides new evidence consistent with systemic anti-Black racism in police killings across the United States. Data come from the Mapping Police Violence Database (2013–2021). I calculate race-specific odds and probabilities that victims of police killings exhibited mental illness, were armed with a weapon, or attempted to flee the scene at the time of their killing. Multilevel, multivariable logistic regression techniques are applied to further account for the victim's age, gender, year of killing, and geographical clustering. I find that White victims are underrepresented, and Black victims overrepresented in the database. Relative to White victims, Black victims also have 60% lower odds of exhibiting signs of mental illness, 23% lower odds of being armed, and 28% higher odds of fleeing. Hispanic victims exhibit 45% lower odds of being armed relative to their White peers but are otherwise comparable. These patterns persist regardless of the victim's age, gender, year of killing, or geographical location (state, zip code, and neighborhood type). Thus, the threshold for being perceived as dangerous, and thereby falling victim to lethal police force, appears to be higher for White civilians relative to their Black or Hispanic peers. Current findings provide empirical support for political initiatives to curb lethal police force, as such efforts could help to reduce racial disparities in deaths by police nationwide.

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Introduction

Recent high-profile police killings of Persons of Color (POC) across the United States (US) continue to spark debates and protests about the enduring presence of systemic racism in policing. Systemic racism refers to stereotypes, emotions, and practices that are reproduced across time and place to advantage one racialized group over others (Phelan & Link, 2015). Charges of systemic racism in policing reflect a broader discourse on continuing legacies of structural and institutional racism in the United States, or how major US institutions—including the criminal justice system, banks, and hospitals, among others—have been established over time to benefit White communities at the expense of minoritized communities (Gee & Hicken, 2021; Rothstein, 2017).

These charges are not unfounded. It is now well-established that policing in the United States is tainted by a deeply racist, anti-Black legacy (Alexander, 2010; Gruber, 2021). Aside from its racist inception, the policing profession continues to struggle with diversity issues, as police forces across the United States are still dominated by White men (Ba et al., 2021; Morabito & Shelley, 2015). Lack of diversity among police jurisdictions, in turn, can perpetuate an unempathetic, "us versus them" standpoint toward communities of color (Legewie & Fagan, 2016), whereby POC civilians are more easily dehumanized than their White peers (Van Cleve, 2016). Moreover, dominant police training tactics can further distort officers' perceptions of on-the-job hazards. For example, police training narratives commonly depict routine traffic stops as perilous encounters that command hyper-vigilance of officers, despite recent estimates indicating that only 1 in 6.5 million traffic stops result in the killing of a police officer (Woods, 2019).

All these factors lead to the reasonable expectation that police officers will tend to be racially biased in their use of lethal force. However, although POC are known to be overrepresented among police killings relative to White persons (Sinyangwe et al., 2021), the reasons for these apparent racial disparities remain obscured. One key source of ambiguity lies in how courts and police jurisdictions have chosen to define "reasonableness" in the use of lethal force. Courts have authorized police officers to use lethal force whenever they perceive "probable cause" that a suspect poses a physical threat. However, without setting objective criteria for "reasonableness" or "probable cause," courts have empowered police officers to act on split-second reasoning that can become clouded by momentary stressors and personal biases (Fagan & Campbell, 2020).

The aim of this research note is to provide new evidence of systemic racism in police killings across the United States with updated data from the Mapping Police Violence Database (MPVD; 2013–2021). The MPVD includes information about multiple

types of police killings, by both on- and off-duty police officers; the race of the victim; whether the victim exhibited signs of mental illness, was armed, or attempted to flee in the moments leading up to their killing; as well as the zip code, state, and neighborhood type—urban, suburban, or rural—in which each killing took place. With these data, I can test multivariable, multilevel models that account for geographic clustering of fatal police encounters nested within zip codes and states. This strategy allows me to reveal potential racial biases in officers' perceptions of "probable cause" of threat, even after accounting for other victim traits and nationwide geographical heterogeneity.

To be sure, other recent studies have found that police officers—especially White officers—are significantly more likely to kill Black and Hispanic civilians, relative to their White peers, even when civilians are unarmed and do not exhibit mental illness (Ba et al., 2021; Fagan & Campbell, 2020; Legewie & Fagan, 2016; Thomas et al., 2021). But these studies were either limited to certain regions like Chicago, or they used older data from the Washington Post that only included fatal shootings by on-duty police officers between 2013 and 2018–2019. The present study uses updated data that includes multiple types of killings, by both on- and off-duty officers, between 2013 and 2021, and across numerous zip codes and states. With the current data and analytic techniques, I can more rigorously document systemic racism in police killings nationwide.

Methods

The MPVD currently represents one of the most comprehensive databases of police killing victims in the United States (Sinyangwe et al., 2021). Documented fatal encounters include deaths by shooting, chokehold, baton, taser, or other means by on- and off-duty police officers between January 2013 and March 2021. The database also includes information about the victim's race, age, gender, geographic location, and behaviors leading up to their fatal police encounter. My final analytic sample includes Black, Hispanic, and White victims of police killings ($N = 7{,}675$). I exclude Asian and Native American victims due to small cell sizes, as well as victims for whom race was not documented.

The three main outcomes are dichotomous and include whether the victim: (1) exhibited signs of mental illness at the scene, (2) was armed at the scene, or (3) attempted to flee the scene by foot or vehicle (1 = yes, 0 = no). Multilevel logistic regression techniques are used to calculate race-specific odds and marginal probabilities of exhibiting each behavior, adjusting for random intercepts by state and zip code; the victim's age (in years) and gender (male vs. female); and the year and geography (urban, suburban, rural) of the encounter. This strategy can determine whether racial disparities in police victimology persist net of other victim traits and average differences across geographic clusters (Raudenbush & Bryk, 2002).

All statistical analyses are conducted in Stata 14. I use Stata's *melogit* command to calculate multilevel, binary logistic regression estimates with random intercepts for fatal encounters nested within zip codes, nested within states. Missing data are handled with listwise deletion.

Results

Table 1 provides descriptive statistics of study variables. In terms of victim behaviors, 26% exhibited signs of mental illness, 78% were armed at the scene, and 31% attempted to flee the scene. The average age of victims is 36 with a range of 1 to 107. The vast majority (95%) of victims are male and the plurality (50%) of encounters occur within suburban areas, followed by urban (28%) and rural (22%) areas. Finally, 51% of victims are documented as White, 29% are Black, and 20% are Hispanic. According to estimates from the 2020 US Census, 62% of the US population is non-Hispanic White, 12% is non-Hispanic Black, and 19% is Hispanic (US Census Bureau, 2021). Thus, White victims appear to be underrepresented, and Black victims overrepresented, in the MPVD dataset.

Table 2 provides odds ratios (OR), 95% confidence intervals, and significance thresholds from multilevel binary logit estimates. ORs greater than one represent a positive association, while ORs less than one represent a negative association with each behavioral outcome. For example, between 2013 and 2021, the odds of victims

Table 1. Descriptive statistics of study variables: mapping police violence database, 2013–2021.

	Mean	*SD*	Min.	Max.	*N*
Victim exhibited mental illness					
No (reference)	.74		0	1	4,904
Yes	.26		0	1	1,707
Victim armed at the scene					
No (reference)	.22		0	1	1,703
Yes	.78		0	1	5,972
Victim attempted to flee					
No (reference)	.69		0	1	3,603
Yes	.31		0	1	1,596
Year of encounter	3.52	2.28	0	8	7,675
Age of victim	36.34	12.87	1	107	7,561
Gender of victim					
Female (reference)	.05		0	1	387
Male	.95		0	1	7,275
Geography of encounter					
Suburban (reference)	.50		0	1	3,800
Urban	.28		0	1	2,141
Rural	.22		0	1	1,671
Race of victim					
White (reference)	.51		0	1	3,899
Black	.29		0	1	2,240
Hispanic	.20		0	1	1,536

Notes: *SD* = standard deviation. Min. = minimum. Max. = maximum. *N* = observations for each variable or cell. Year of encounter ranges from 2013 (=0) to 2021 (=8).

Table 2. Multilevel binary logit models of fatal encounters nested within zip codes, nested within states: mapping police violence database, 2013–2021.

	Victim exhibited mental illness				Victim armed at the scene				Victim attempted to flee			
Year of encounter	.908	(.884,	.932)	***	1.070	(1.044,	1.097)	***	1.116	(1.078,	1.156)	***
Age of victim	1.017	(1.012,	1.021)	***	1.014	(1.009,	1.019)	***	.966	(.961,	.972)	***
Gender of victim												
Female (reference)												
Male	.837	(.648,	1.081)		1.699	(1.342,	2.149)	***	1.418	(1.051,	1.915)	*
Geography of encounter												
Suburban (reference)												
Urban	.891	(.767,	1.035)		1.057	(.920,	1.214)		1.131	(.979,	1.307)	
Rural	.722	(.615,	.846)	***	.971	(.832,	1.133)		1.202	(1.029,	1.404)	*
Race of victim												
White (reference)												
Black	.402	(.342,	.474)	***	.826	(.716,	.953)	**	1.279	(1.092,	1.499)	**
Hispanic	.545	(.457,	.651)	***	.859	(.730,	1.011)		1.052	(.878,	1.262)	
# of encounters	6462				7488				5670			
# of zip codes	4355				4868				4045			
# of states	51				51				51			

Notes: Odds ratios are reported with 95% confidence intervals in parentheses. Estimates include random intercepts for zip codes and states (not shown). The number of states includes the Washington D.C. area.
*$p < .05$, **$p < .01$, ***$p < .001$ (two-tailed).

exhibiting signs of mental illness during encounters have *declined* by around 10% each year (OR = .908; $p < .001$). Conversely, odds of victims being armed (OR = 1.070) or fleeing the scene (OR = 1.116) have *increased* each year ($p < .001$). The age of the victim is also a significant predictor of each outcome ($p < .001$). Older age predicts greater odds of exhibiting mental illness (OR = 1.017) and being armed at the scene (OR = 1.014), but lower odds of fleeing the scene (OR = .966). Relative to female victims, male victims also have significantly greater odds of being armed (OR = 1.699; $p < .001$) and fleeing the scene (OR = 1.418; $p < .05$).

The bottom of Table 2 displays coefficients by race. Relative to their White peers, Black victims have 60% lower odds of exhibiting mental illness (OR = .402; $p < .001$), 17% lower odds of being armed at the scene (OR = .826; $p < .01$), but 28% greater odds of fleeing the scene (OR = 1.279; $p < .01$). Hispanic victims also have 45% lower odds of exhibiting mental illness relative to Whites (OR = .545; $p < .001$), but otherwise are comparable. When comparing Hispanic and Black victims, Hispanic victims have 35% greater odds of exhibiting mental illness ($p < .01$), 18% lower odds of fleeing the scene ($p < .05$), but similar odds of being armed (not shown). These racial patterns hold regardless of the year of the encounter, age of victim, gender of victim, and the geographical clustering of encounters.

Figures 1 through 3 plot racial differences in behaviors as average marginal probabilities, with covariates held at their respective means. Figure 1 shows that White victims have a 32% predicted probability of exhibiting mental illness, while Black and Hispanic victims have respective probabilities of 16% and 21%. In Figure 2,

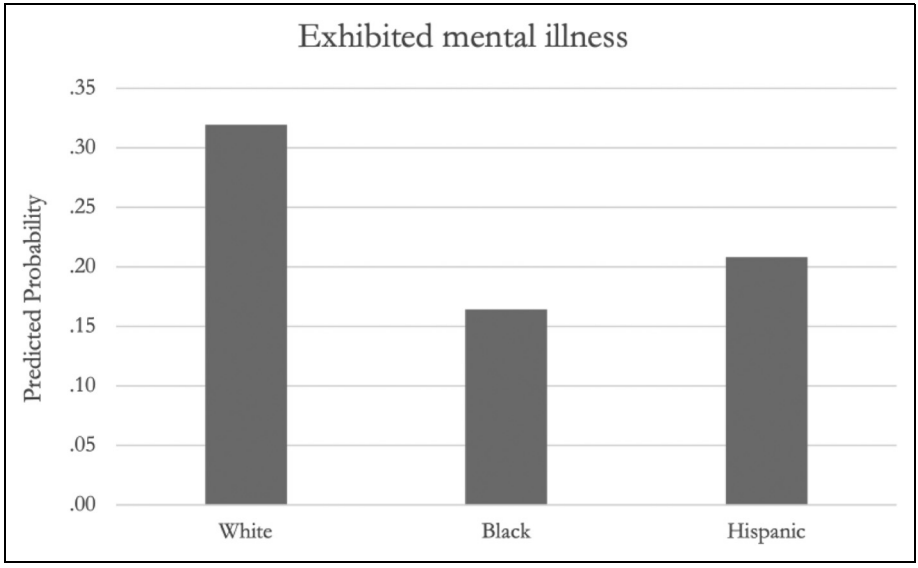

Figure 1. Race-specific marginal probabilities of victims exhibiting mental illness during fatal police encounters: mapping police violence database, 2013–2021.

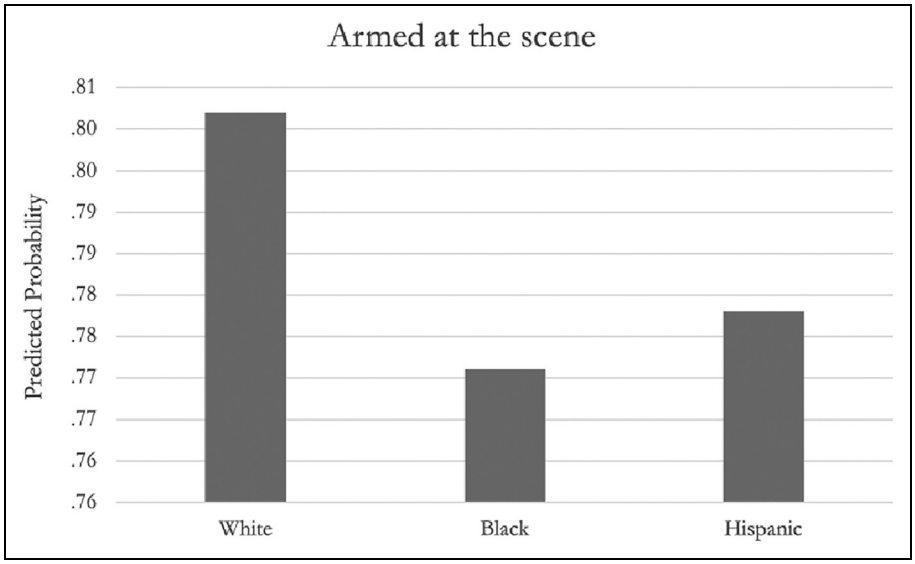

Figure 2. Race-specific marginal probabilities of victims being armed during fatal police encounters: mapping police violence database, 2013–2021.

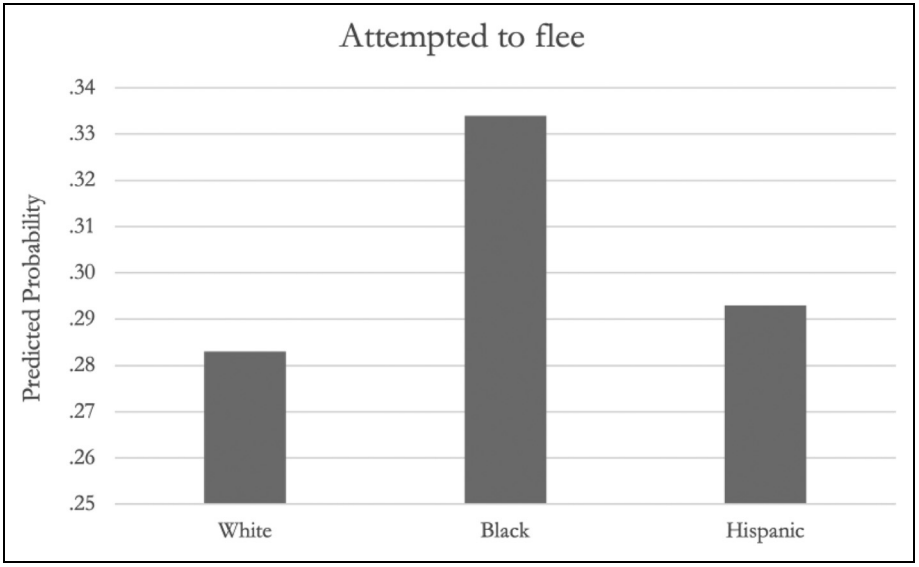

Figure 3. Race-specific marginal probabilities of victims attempting to flee during fatal police encounters: mapping police violence database, 2013–2021.

White victims have an 80% predicted probability of being armed, while Black and Hispanic victims have respective probabilities of 77% and 78%. Finally, Figure 3 shows that Black victims have the highest average probability of fleeing the scene at 33%, followed by Hispanic (29%) and White (28%) victims.

Conclusion

In a nationwide database of police killings between 2013 and 2021, I found that Black victims of police killings were overrepresented, and their White peers underrepresented, relative to the general US population. I also found that Black victims were less likely than their White peers to exhibit signs of mental illness or be armed at the scene of their killings, and more likely to flee the scene. Hispanics were less likely than Whites to exhibit signs of mental illness, but no more or less likely to be armed or flee. All the above patterns persisted even after accounting for heterogeneity by state, zip code, and neighborhood type in which fatal encounters occurred.

This study provides rigorous and compelling evidence of systemic racism in police killings across the United States. Data for this study encompassed all 50 states and the Washington, D.C. area; over 4,000 five-digit zip codes; and a mix of suburban, urban, and rural neighborhoods. Despite such geographic heterogeneity, White victims appeared to pose greater threats to the safety of police officers than Black or Hispanic victims, yet also were underrepresented in police killings relative to the general US population. Put another way, the threshold for being perceived as dangerous, and thereby falling victim to lethal police force, appears to be higher for White civilians relative to their Black or Hispanic peers. These findings are consistent with the notion of systemic pro-White/anti-Black racism in policing nationwide.

This study has broader implications for policing, policymaking, and public health. First, current findings are supportive of campaigns to diversify and retrain police officers in efforts to curb racial disparities in the use of lethal police force. For example, other studies have found that Black and Hispanic officers tend to use less force and make fewer stops or arrests, relative to their White peers, especially in majority-Black or Hispanic neighborhoods (Ba et al., 2021; Legewie & Fagan, 2016). The present study suggests that Black and Hispanic officers may be more understanding of the skepticism and fear that POC civilians express toward police officers, given the racist legacies of policing in our country (Alexander, 2010; Gruber, 2021). Thus, police officers—especially White officers—should be better trained on how to anticipate and manage, without lethal force, Black and Hispanic civilians who express hostility or trepidation toward them.

Policymakers will also benefit from knowing that political initiatives aimed at curbing the use of lethal police force could help to address racial disparities in deaths by police, and may even help to mitigate broader health disparities in the United States. For instance, Black Americans—and especially Black men—have long been known to live shorter and sicker lives than their White peers (Hummer & Hamilton, 2019). Recent studies also indicate that recurring fears of police victimization represent major chronic stressors in the lives of Black Americans, particularly

Black men (Bor et al., 2018; Curtis et al., 2021; McLeod et al., 2020; Sewell et al., 2016). This study suggests that redressing systemic racism in policing could conceivably reduce chronic stress burdens and improve health among Black men, who are still disproportionately targeted by police nationwide.

This brief research note provides new evidence consistent with systemic anti-Black racism in police killings across the United States. Future studies should replicate and extend these findings as more data on police violence become available.

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